Application No. 10/538,167

Amendment

Reply to Office Action of October 15, 2008

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method for treatment of gas exiting the anode side (301) of a solid oxide fuel cell stack (1) fuelled fueled with a carbon containing fuel (100) in a power producing process, characterized in that wherein the anode gas and cathode gas are kept separated by a seal system in the SOFC stack (4), wherein and that the main part majority of the H₂ and CO in the anode exhaust (351) is separated from the CO₂ in said exhaust (301) by a separation process based on H₂ selective membranes (350), and wherein the membrane or an included catalyst has water-gas-shift activity and catalyses the water-gas-shift reaction.

Claim 2 (currently amended): A method according to claim 1, eharacterized in that wherein the anode exhaust (359) is treated such that most of the CO₂ is not emitted to the atmosphere.

Claim 3 (currently amended): A method according to claim 1, characterized in that wherein steam (361) is injected on the permeate side of the hydrogen selective membranes (350).

Claim 4 (currently amended): A method according to claim 1, characterized in that wherein the recovered H₂ (355) is fed back to the main SOFC stack (1) and used as fuel.

Claim 5 (withdrawn): A method according to claim 1, characterized in the recovered H₂ (355) is used to heat the oxygen depleted air (206) entering the expander (207).

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Claim 6 (withdrawn): A method according to claim 1, characterized in that the recovered H₂ (355) is used to heat the air entering the SOFC stack (205).

Claim 7 (withdrawn): A method according to claim 1, characterized in that the recovered H₂ (355) is exported as a sales product.

Claim 8 (withdrawn): A method according to claim 1, characterised in that recovered H₂ (355) is fed to the desulphurisation unit (101) to provide necessary hydrogen for hydrodesulphurisation.

Claim 9 (withdrawn): A method for treatment of gas exiting the anode side (301) of a solid oxide fuel cell stack (1) fuelled with a carbon containing fuel (100) in a power producing process,

characterised in that the anode gas and cathode gas are kept separated by a seal system in the SOFC stack (4), that the main part of the H₂ and CO in the anode exhaust (301) is separated from the CO₂ in said exhaust by a separation process based on compressing (312), drying (319) and cooling (321) to a pressure and temperature where most of the CO₂ is in liquid form (322) and subsequently is separated from the H₂ and CO in a conventional gravity based separation process (323).

Claim 10 (withdrawn): A method according to claim 9, characterised in that the anode exhaust (301) is treated such that most of the CO₂ is not emitted to the atmosphere.

Claim 11 (withdrawn): A method according to claim 9, characterised in that the recovered H₂ an CO (329) is fed back to the main SOFC stack (1) and used as fuel

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Claim 12 (withdrawn): A method according to claim 9, characterised in that the recovered H_2 an CO (329) is removed in order to avoid build-up of gases which are non-condensable and non-combustible.

Claim 13 (withdrawn): A method according to claim 9, characterised in that the recovered H₂ an CO (329) is fed to the desulphurisation unit (101) to provide the necessary hydrogen for hydrodesulphurisation.